

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 2 and 7 have been cancelled without prejudice or disclaimer, and claims 1, 6 and 23-25 have been amended. No new matter is being presented, and approval and entry of the foregoing amendments are respectfully requested.

Claims 1, 3-6, and 8-28 are pending and under consideration. Reconsideration is requested.

STATUS OF THE DRAWINGS:

In the Office Action at page 1, box 10, the Examiner did not positively object or accept the drawings as filed February 12, 2002. However, as no detailed objection was made, it is assumed that the Examiner accepted the drawings.

REJECTION UNDER 35 U.S.C. §102:

In the Office Action at pages 2-3, the Examiner rejects claims 25 and 26 under 35 U.S.C. §102 in view of Wang (U.S. Patent No. 5,783,328). This rejection is respectfully traversed and reconsideration is requested.

Among other features, the Examiner asserts that Wang teaches a $\text{Li}_{1+x}\text{Mn}_2\text{O}_4$ coated with lithium hydroxide and potassium hydroxide or sodium hydroxide. By way of review, Wang teaches treating a spinel powder with hydroxides. The coated spinel powder is used as a positive active material in a lithium coin cell. (Col. 2, lines 55-65, col. 9, lines 15-51). However, since Wang coats the individual spinel particles, Wang does not disclose a layer of the spinel on a current collector and coating the spinel layer with the hydroxide coating, or that a layer of the spinel is separate from a layer of the lithium hydroxide and potassium hydroxide or sodium hydroxide.

In contrast, claim 25 recites, among other features, a "layer of a lithiated compound" and "a surface treatment layer" coated on the layer. As such, it is respectfully submitted that Wang does not disclose or suggest the invention recited in claim 25.

Claim 26 is deemed patentable due at least to its depending from claim 25.

In the Office Action at pages 3-4, the Examiner rejects claims 1, 3-6, 8, 9, and 11-14 under 35 U.S.C. §102 in view of Ohnishi et al. (U.S. Patent No. 5,200,282). This rejection is respectfully traversed and reconsideration is requested.

Among other features, the Examiner asserts that Ohnishi et al. teaches a current

collector coated with a cobalt oxyhydroxide and an active material, and that the active material layer can be coated with a cobalt oxyhydroxide. As a point of clarification, Ohnishi et al. teaches applying a powder of a conductive material, such as cobalt hydroxide, to an active material in particulate form as opposed to an active material layer. Specifically, Ohnishi et al. teaches that, using the method of Japanese Patent Publication No. 62-256366, the conductive material is added to the active material such that the formed active material layer has improved the conductivity. However, Ohnishi et al. teaches against using only such an addition of conductive materials for reasons set forth in col. 4, lines 50-57 col. 5, lines 3-13 (Col. 4, line 46 to col. 5, lines 13). Instead, Ohnishi et al. teaches forming a boundary layer of cobalt oxyhydroxide on the current collector, and forming the active material on the boundary layer as shown in FIG. 13. Layer thicknesses of the boundary layer are shown in FIG. 3. (Col. 3, lines 13-46, col. 9, lines 49-60).

As shown in Example 1, a slurry of the active material including cobalt is pasted on a wire mesh that is coated with cobalt to form a nickel electrode. (Col. 7, lines 25-30). As such, Ohnishi et al. teaches forming a boundary layer between the active material layer and the current collector, but does not disclose forming the boundary layer on the active material layer, or that a current collector coated with an active material is further coated with the boundary layer.

In contrast, claim 1 recites, among other features, "a surface-treatment layer on said positive active material layer such that said positive active material layer is disposed between said surface-treatment layer and said current collector." Further, claim 6 recites, among other features, "treating the current collector, which is coated with a layer of a positive active material, with a coating liquid, the coating liquid comprising one of a coating element and a coating-element-included compound." As such, it is respectfully submitted that Ohnishi et al. does not disclose or suggest the invention recited in claims 1 and 6.

Additionally, Ohnishi et al. discloses using an active material used in a nickel cadmium battery, but does not suggest using a lithiated compound as do claims 1 and 6.

Claims 3-5, 8, 9, and 11-14 are deemed patentable due at least to their depending from corresponding claims 1 and 6.

In the Office Action at pages 4-5, the Examiner rejects claims 1-9, 11, 12, 23, 25 and 26 under 35 U.S.C. §102 in view of Amatucci et al. (U.S. Patent No. 5,705,291). This rejection is respectfully traversed and reconsideration is requested.

As a point of clarification, claims 2 and 7 have been cancelled without prejudice or disclaimer. As such, it is respectfully submitted that the rejection of claims 2 and 7 is deemed moot.

Among other features, the Examiner asserts that Amatucci et al. teaches a composition layer that includes LiMn_2O_4 coated with a layer of boron oxide lithium hydroxide, aluminum oxide or mixtures thereof. By way of review, Amatucci et al. teaches coating LiMn_2O_4 particulates with a thin film to reduce the contact between an electrolyte and a surface of the LiMn_2O_4 particulate. As an example of producing such a coated LiMn_2O_4 particulate, in Example 1, LiMn_2O_4 powder was mixed by grinding a 1% mixture of H_3BO_3 and heating the mixture at 800°C to form an amorphous borate film on surfaces of the LiMn_2O_4 particulates. (Col. 4, lines 1-16 and 31-44). However, there is no suggestion that the borate film is deposited as a layer on a layer of the LiMn_2O_4 , or that the LiMn_2O_4 active material is coated as a layer on the current collector with the borate film being coated on the coated current collector.

In contrast, claim 1 recites, among other features, "a surface-treatment layer on said positive active material layer such that said positive active material layer is disposed between said surface-treatment layer and said current collector." Further, claim 6 recites, among other features, "treating the current collector, which is coated with a layer of a positive active material, with a coating liquid, the coating liquid comprising one of a coating element and a coating-element-included compound." As such, it is respectfully submitted that Amatucci et al. does not disclose or suggest the invention recited in claims 1 and 6.

For at least similar reasons, it is respectfully submitted that Amatucci et al. does not disclose or suggest the invention recited in claims 23 and 25.

Lastly, even assuming arguendo Amatucci et al. teaches using a lithium hydroxide as asserted by the Examiner on page 4 of the Office Action, Amatucci et al. does not suggest using another hydroxide in col. 2, lines 18-23. As such, it is also respectfully submitted that Amatucci et al. does not suggest that the coating does not include lithium as recited in claims 1, 6, 23, and 25.

Claims 3-5, 8, 9, 11, 12, and 26 are deemed patentable due at least to their depending from corresponding claims 1, 6 and 25.

REJECTION UNDER 35 U.S.C. §103:

In the Office Action at pages 5-7, the Examiner rejects claims 10, 15-24, 27, and 28 under 35 U.S.C. §103 in view of Amatucci et al., Jen (U.S. Patent Publication No. 2002/71913), and Howard et al. (U.S. Patent No. 6,558,844). The rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's characterizations of the disclosures of Jen and Howard et al. are correct and that the combination is otherwise correct, the Examiner does

not rely upon Jen and Howard et al. to cure the above noted defect of Amatucci et al. as applied to claims 1-9, 11, 12, 23, 25 and 26. In addition and for reasons similar to why Amatucci et al. does not disclose the invention recited in claims 1 and 6, it is respectfully submitted that Amatucci et al. does not disclose or suggest the invention recited in claims 17, and 20. Therefore, it is similarly respectfully submitted that the combination of Amatucci et al., Jen and Howard et al. does not disclose or suggest the invention recited in claims 17 and 20.

Also, it is respectfully submitted that the combination of Amatucci et al., Jen and Howard et al. does not disclose or suggest the invention recited in claims 10, 15, 16, 18, 19, 21, 22, 24, 27, and 28 due at least to the combination not disclosing or suggesting the invention recited in claims 6, 17, 20, 23, and 25 from which claims 10, 15, 16, 18, 19, 21, 22, 24, 27, and 28 correspondingly depend.

In the Office Action at pages 7-8, the Examiner rejects claims 1-5 under 35 U.S.C. §103 in view of Wang and Miyamoto et al. (U.S. Patent No. 6,582,855). The rejection is respectfully traversed and reconsideration is requested.

As a point of clarification, claim 2 has been cancelled without prejudice or disclaimer. As such, it is respectfully submitted that the rejection of claim 2 is deemed moot.

For similar reasons as to why Wang does not disclose or suggest the invention recited in claims 25 and 26, it is respectfully submitted that Wang does not disclose or suggest "a surface-treatment layer on said positive active material layer such that said positive active material layer is disposed between said surface-treatment layer and said current collector" as recited in claim 1. As such, even assuming arguendo that the Examiner's characterizations of the disclosure of Miyamoto et al. is correct and that the combination is otherwise correct, the Examiner does not rely upon Miyamoto et al. to cure the above noted defect of Wang as applied to claim 1. As such, it is respectfully submitted that the combination of Wang and Miyamoto et al. does not disclose or suggest the invention recited in claim 1.

Claims 3-5 are deemed patentable due at least to their depending from claim 1.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, it is respectfully submitted that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution

SERIAL NO. 10/072,923

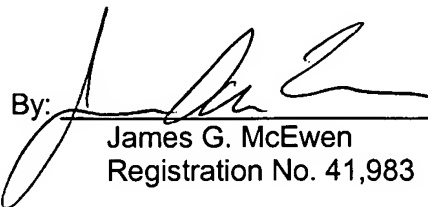
DOCKET NO. 1567.1026

can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any additional fees associated with the filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

By: 
James G. McEwen
Registration No. 41,983

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

Date: FEB 9, 2004